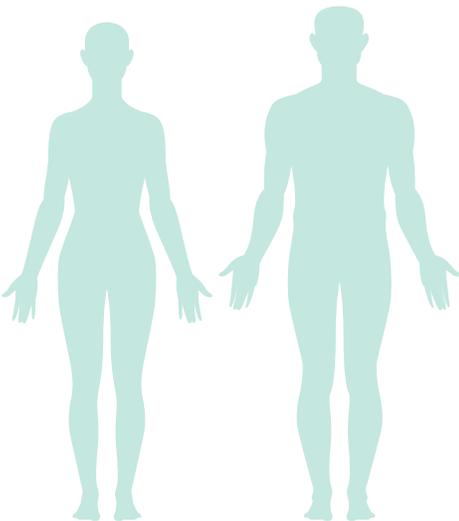




# 2012 DENTAL WORKFORCE REPORT

Washington State Dental Association · July 2013





## ABOUT THE WSDA

The Washington State Dental Association (WSDA) has been the voice of dentistry in Washington since its inception in 1887. With over 4,000 members (representing nearly 70 percent of practicing dentists in the state), the Association exists to promote oral health of the highest quality. Members of the WSDA belong to a tripartite system that also includes the American Dental Association and local component societies.

WSDA's member dentists are committed to cost-effective, practical solutions that prevent disease and ensure quality oral health for all Washingtonians. WSDA is a leader in developing innovative public policy solutions, working with community organizations, government agencies, and legislators to strengthen the dental safety net and reduce barriers to care. WSDA member dentists care about their local communities, and volunteer their time and services providing more than 100,000 patients with uncompensated care each year.

[www.wdda.org](http://www.wdda.org)

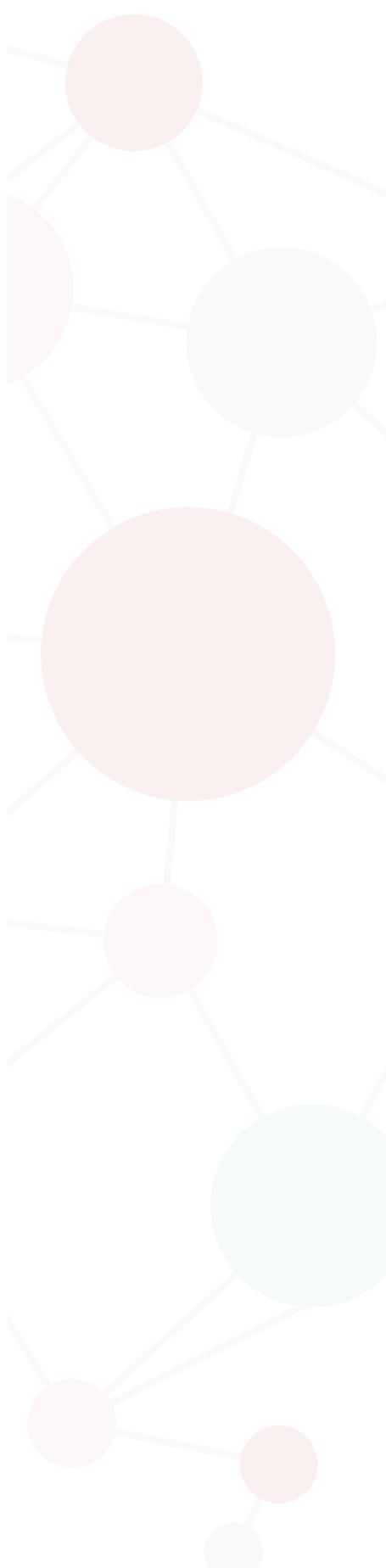


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# EXECUTIVE SUMMARY

The Washington State Dental Association represents over 4,000 dentists who are dedicated to improving the oral health care of all Washingtonians. The 2012 Dental Workforce Report represents an in-depth analysis of data sets from the Washington State Department of Health (DOH), the American Dental Association (ADA), and the Washington State Dental Association (WSDA), which when combined represent a comprehensive picture of the state's dental workforce. This report examines the current dental workforce and uses recent trends to make projections about Washington's dental workforce for the next 20 years. Key findings from this report include the following:

## Dentist Demographics:

- 88% of Washington dentists work full time, and 84% own their practice.
- The number of female dentists in Washington state continues to grow. While 25% of Washington's licensed dentists are female, 41% of newly-licensed dentists in Washington in 2011 were female.
- Washington's newly-licensed dentists reflect increasing racial and ethnic diversity. Dentists licensed in 2011 for the first time were 56.7% white, 31.7% Asian, and 11.6% other minorities, while Washington's overall workforce is 75.3% white, 19.8% Asian, and 4.9% other minorities.
- The percentage of newly-licensed dentists in Washington who were trained at the University of Washington School of Dentistry has fallen sharply in the last four decades, from 64% in 1972 to 22% in 2011.
- The average age of all actively-practicing dentists in Washington is 49 years old. The average age of actively-practicing dentists nationally is 49.8 years old.
- 5% of Washington's dentists went to dental school outside of the United States.

## Workforce Projection and Distribution of Dentists:

- Washington's current ratio of dentists to population ranks the state in the top 10 for the nation.
- The current (2012) ratio of dentists to population is 71 dentists for every 100,000 Washingtonians. This compares to 64 dentists per 100,000 in 1993 and 69 dentists per 100,000 in 2003. The national ratio has remained at 61 dentists per 100,000 people for more than two decades.
- The projected number of dentists relative to the population is predicted to continue to increase over the next few years, and then return to the ratio seen in Washington in the late 1990s and early 2000s. In 2022, the estimated ratio is 69 dentists for every 100,000 Washingtonians, and in 2032 the estimated ratio is 66 dentists for every 100,000 Washingtonians.
- From 2003-2012, an average of 168 dentists per year obtained a Washington dental license for the first time.
- 20 of Washington's 38 counties have fewer than 50 dentists for every 100,000 people – 11% of Washington's residents live in these 20 counties.

# BACKGROUND

An important part of understanding oral health care in Washington state is understanding the dentists who provide it. The purpose of this report is to take a close look at the state's dental workforce and answer the following questions:

- What are the characteristics of dentists in Washington, and how have they changed over time?
- Is Washington's dental workforce expected to keep pace with predicted population growth into the future?
- How is the dental workforce distributed throughout the state?

This report aims to continue or expand on previous work on Washington's dental workforce, including the Washington State Dental Association's 2001 survey (Hart, 2001) and a 2009 report from the Washington, Wyoming, Alaska, Montana, Idaho (WWAMI) Center for Health Workforce Studies (Skillman, et al., 2009). In addition to providing the most up-to-date information on Washington's dental workforce, this report adds additional insights by analyzing data that was previously unavailable. This report also includes the most recent projection of the size of the dental workforce in the future.

# METHODOLOGY

## Data Sources

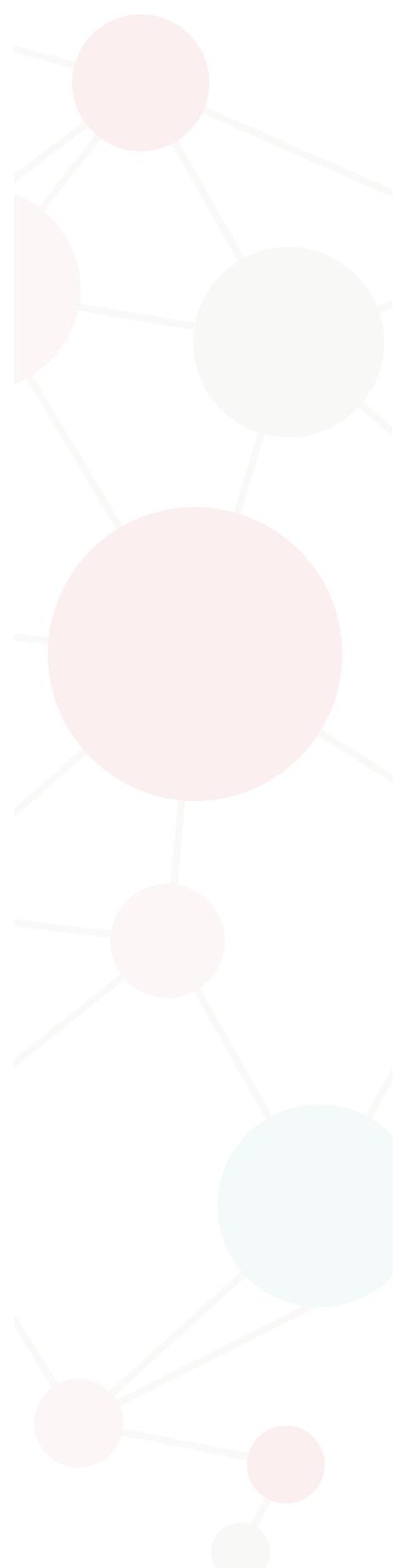
The analysis in this report is based primarily upon three sets of data. The first is dentist licensing data from the Washington State Department of Health (DOH), obtained in April 2013. This data includes license and demographic information for every provider with an active Washington state dental license. The second set of data is from the American Dental Association (ADA), provided in February 2013. Note that 2012 ADA data regarding dental and postdoctoral schools attended and the percentage of dentists owning their own practice were not available and so 2011 data from the DOH and ADA were used instead.

The DOH and ADA data were combined by matching the dentists' license numbers, which were in both data sets. There were a number of variables that were included in one data set but not the other, including the dental schools the dentists attended and the dates they first obtained a Washington state license. Combining the two data sets allowed for a more in-depth analysis. For information contained in both data sets, such as gender and current address, the Department of Health data was used. Where not otherwise noted, all statistics and figures in this report came from analysis of this combined data set.

For the purposes of this report, the set of dentists in Washington was narrowed down to those who had both an active dental license and an address in Washington state, according to Department of Health records. 4,955 dentists met these criteria as of April 2013.

The third set of data used was collected from WSDA member dentists. In July 2012, WSDA sent out an email survey to its members that asked, among other things, about workforce details (such as full-time vs. part-time status) and retirement plans. A total of 425 member dentists responded to the survey. Data from the survey results were used when similar data were lacking in the larger DOH and ADA combined data set, such as estimated retirement dates. The report notes where this data set was used.

For comparison, information was also gathered from previously published reports, which are cited throughout.



# CHARACTERISTICS OF WASHINGTON DENTISTS



The average age of Washington's dentists is typical of the nation as a whole, and the largest single age group is aged 40-44.

## AGE

The average age of active dentists in Washington is 49 years old, and the largest single age group is the 40-44 year old range (Figure 1). Female dentists as a whole are significantly younger than male dentists: the average age for females is 42 years old, while the average age for males is 52. For 2009, the ADA reported an average age of 49.0 for Washington, and 49.8 for the nation as a whole; individual states ranged from 46.3 to 53.2 (American Dental Association, 2011b, pp. 25-6). In 2001, a WSDA-commissioned workforce survey of private practice dentists found an average age of 48.3 (Hart, 2001).

There was an unusually large group of dentists educated in the 1970s throughout the United States. This can be seen in the relatively high number of dentists clustered in the 60-64 age group in Figure 1. The ADA predicts the U.S. dental workforce will become more evenly distributed by age once this group has retired (American Dental Association, 2011a, p. 14).

## GENDER

An increasing number of females are becoming licensed dentists in Washington. While the overall percentage of females in the workforce is 25%, the percentage of newly-licensed female dentists has been higher in recent years, up to a high point of 41% for the 2011 cohort of newly-licensed dentists (Figure 2).

### WHAT DOES IT SHOW?



This infographic represents the percentages of women and men in a cohort of newly-licensed dentists in one calendar year over five different decades

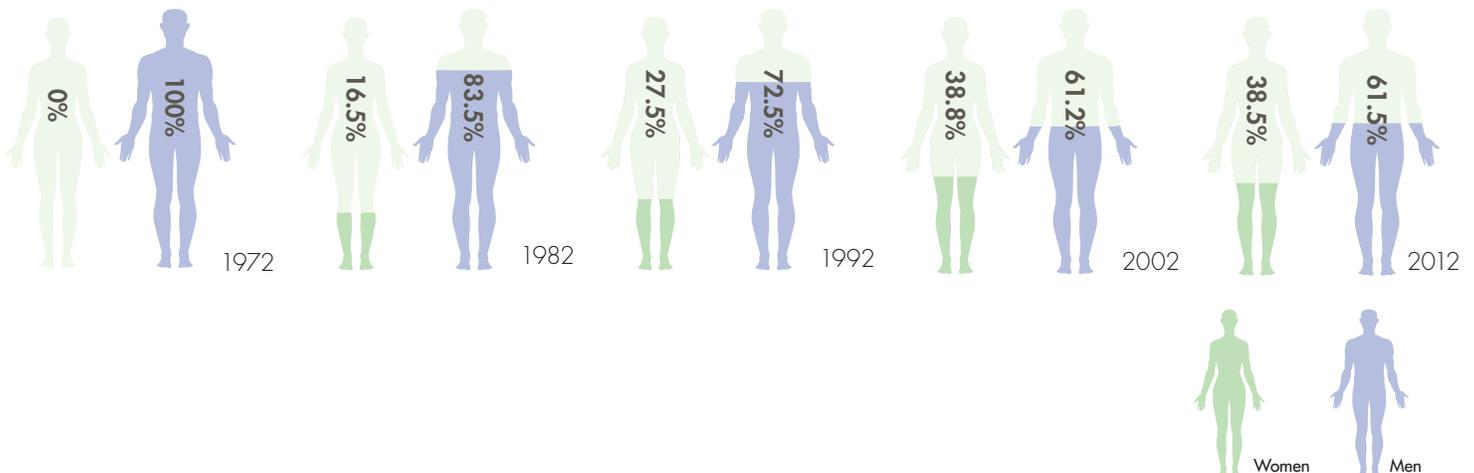
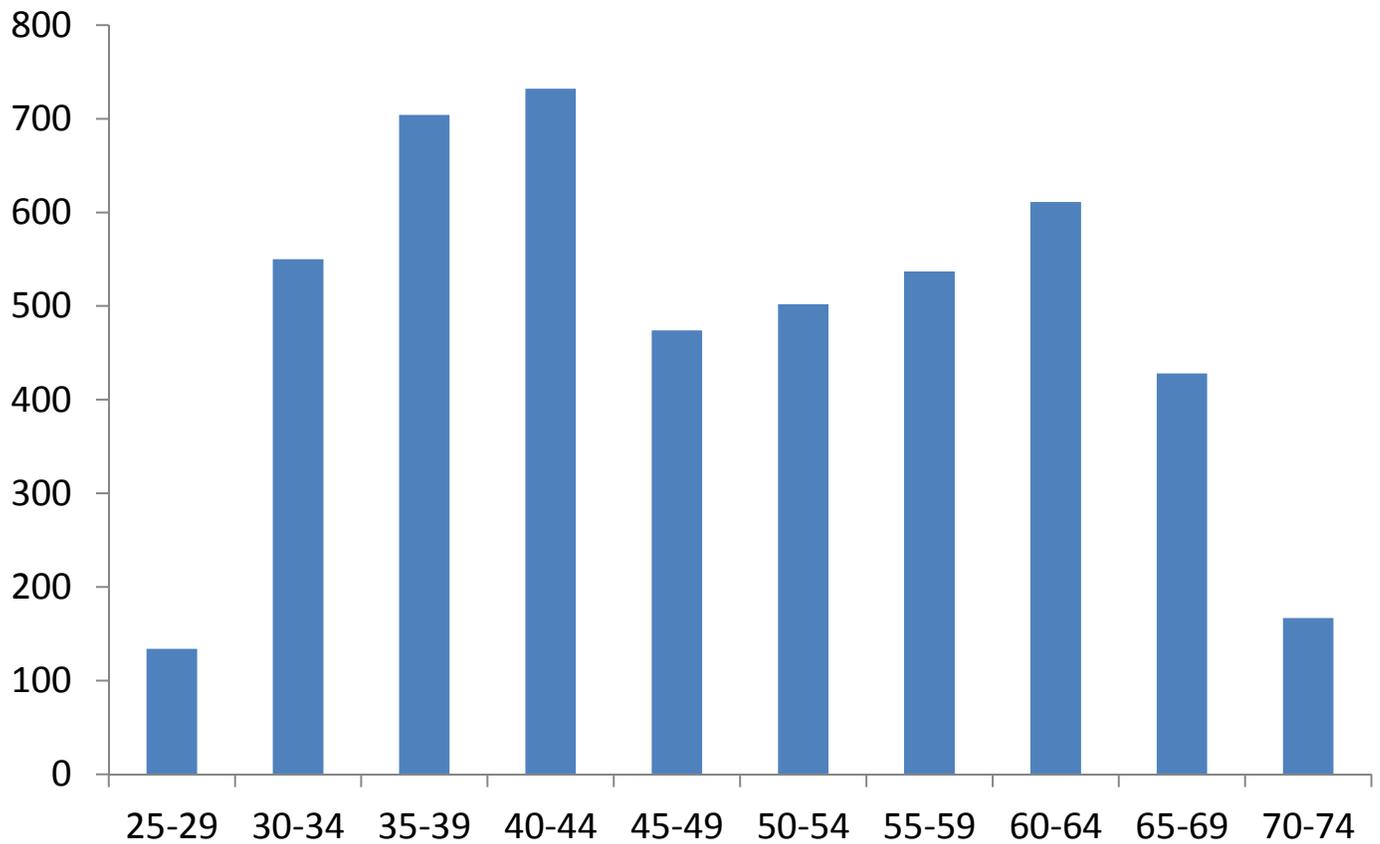
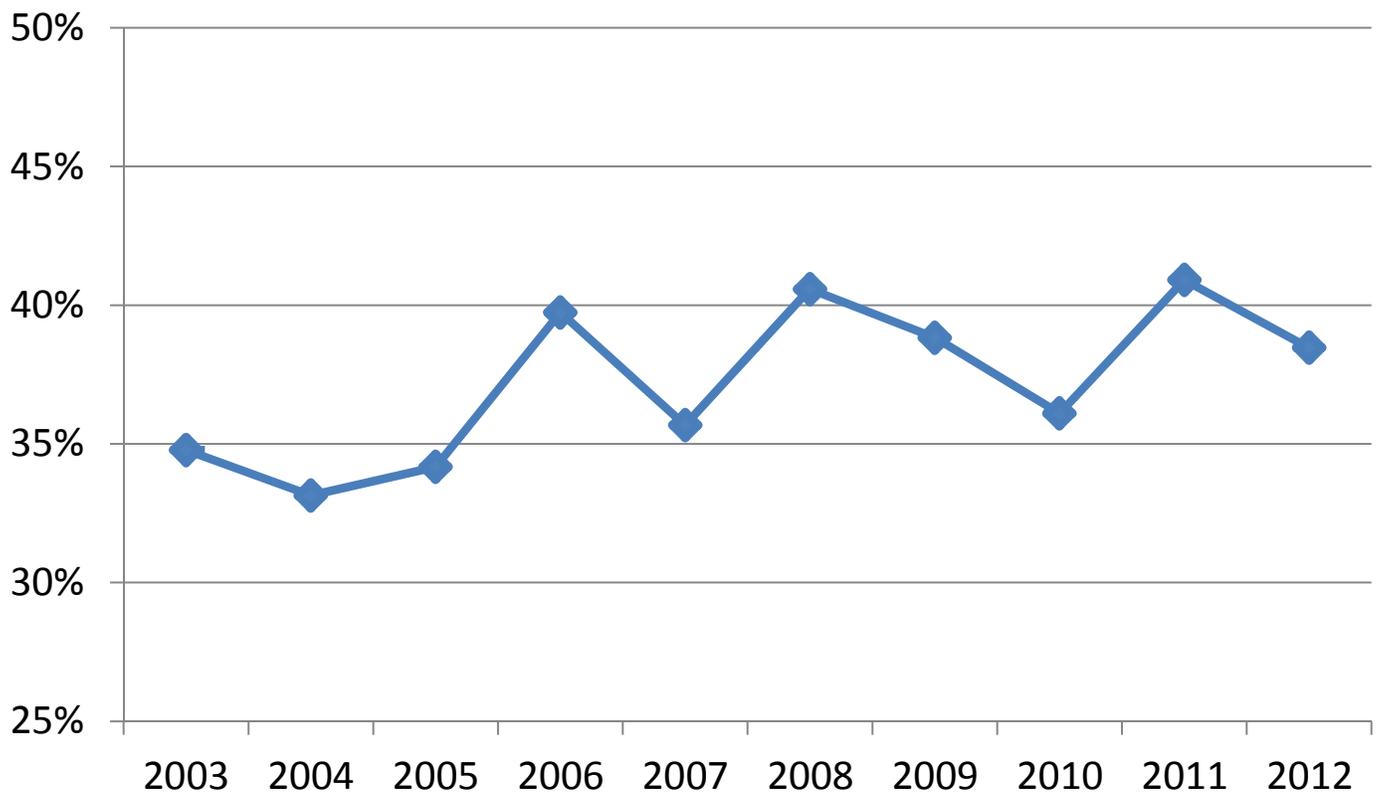


Figure 1: Number of Dentists in Washington By Age Group, 2012



Source: DOH and ADA data, as analyzed by WSDA

Figure 2: Percentage of Newly-Licensed Female Dentists in Washington, By Initial License Year



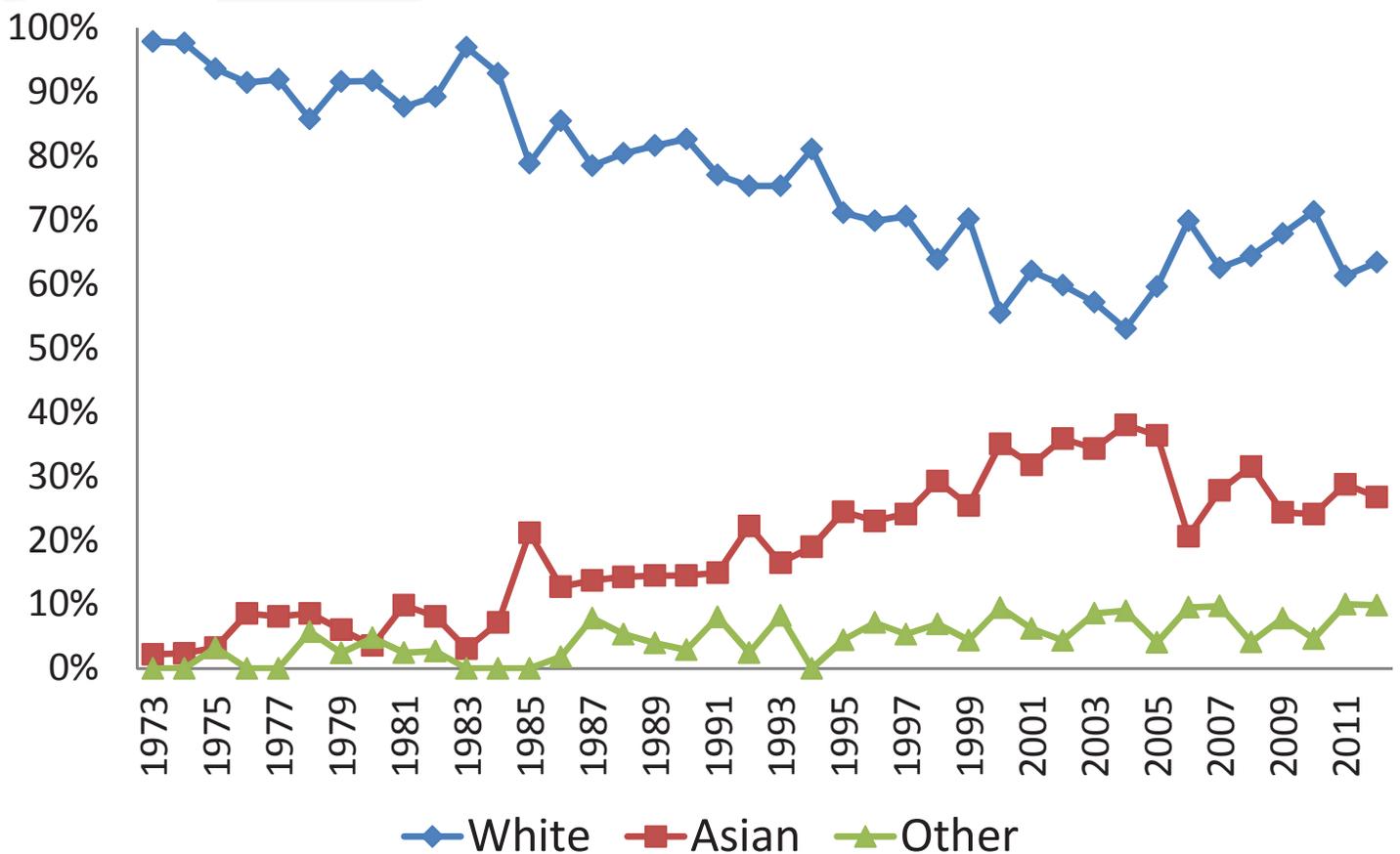
Source: DOH and ADA data, as analyzed by WSDA

# CHARACTERISTICS OF WASHINGTON DENTISTS

## RACE & ETHNICITY

The racial and ethnic diversity of Washington's dental workforce has been increasing over time (Figure 3). Yearly cohorts of newly-licensed dentists are making Washington's overall workforce more diverse. While the current overall workforce is 75.3% White, 19.8% Asian, 2.0% Hispanic, 1.7% Black, 0.4% American Indian, 0.1% Pacific Islander, and 0.8% other unidentified groups, the 2011 cohort of newly-licensed dentists was 56.7% White, 31.7% Asian, 5.0% Hispanic, 3.3% Black, and 3.4% other groups — showing a decrease in the number of newly-licensed white dentists, and an increase in all other ethnicities.

Figure 3: Race and Ethnicity of Newly-Licensed Dentists in Washington, By Initial License Year



Source: DOH and ADA data, as analyzed by WSDA

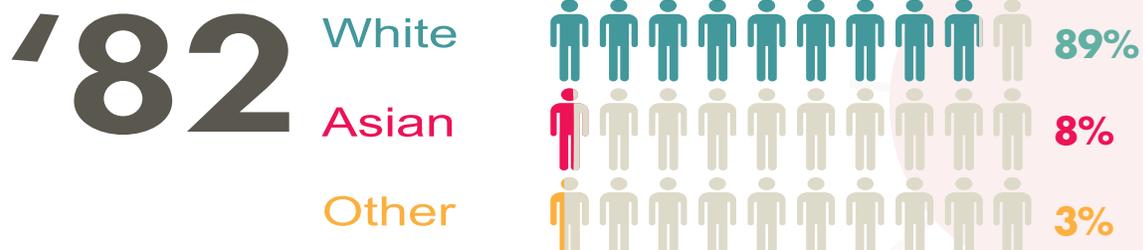


The racial and ethnic diversity of Washington's dental workforce has been increasing with time

## WHAT DOES IT SHOW?



This infographic represents the racial and ethnic diversity of a cohort of newly-licensed dentists in one calendar year over five different decades



# CHARACTERISTICS OF WASHINGTON DENTISTS



While the number of newly-licensed Washington dentists trained at the University of Washington has remained steady, the number of Washington dentists trained out-of-state has increased significantly in recent decades.

## DENTAL SCHOOL

Washington state has only one dental school, located at the University of Washington (UW), which enrolled 63 students in 2012 (University of Washington School of Dentistry website). Of all the actively practicing dentists in Washington, 39% received their dental school training in-state at UW. However, the proportion of newly-licensed dentists who were trained in-state has changed significantly over time (Figure 4). While the number of UW graduates who have gone on to work in Washington has remained fairly stable since the 1980s, the number of out-of-state graduates who have come to work in Washington has increased significantly. The percentage of newly-licensed dentists who were trained in-state has fallen sharply as a result, from 64% in 1972, 63% in 1982, 33% in 1992, 21% in 2002, and 22% in 2011. Washington will rely upon dentists trained outside of the state for most of its incoming dental workforce in the foreseeable future.

All U.S.-trained dentists must obtain an undergraduate (Bachelor's) degree and a graduate dental degree (either a D.D.S. or a D.M.D.). Combined, both degrees require eight years of coursework after high school.

## POST DOCTORAL TRAINING

Today, 29% of dentists in Washington have attended postdoctoral dental education, according to ADA records. Postdoctoral dental education includes one-year residencies for foreign-trained dentists and multi-year postdoctoral training to become a specialist (oral surgeon, orthodontist, pediatric dentist, etc.). Not all dentists with postdoctoral education have become specialists; only 25% of dentists in the WSDA member survey responded that they were specialists. Nationally, 21% of all dentists in the United States are specialists (American Dental Association, 2011b). The percentage of dentists who have attended postdoctoral education has been increasing over time (Figure 5).

### WHAT DOES IT SHOW?



This infographic represents the percentage of in-state and out-of-state students in a cohort of newly-licensed dentists in one calendar year over five different decades

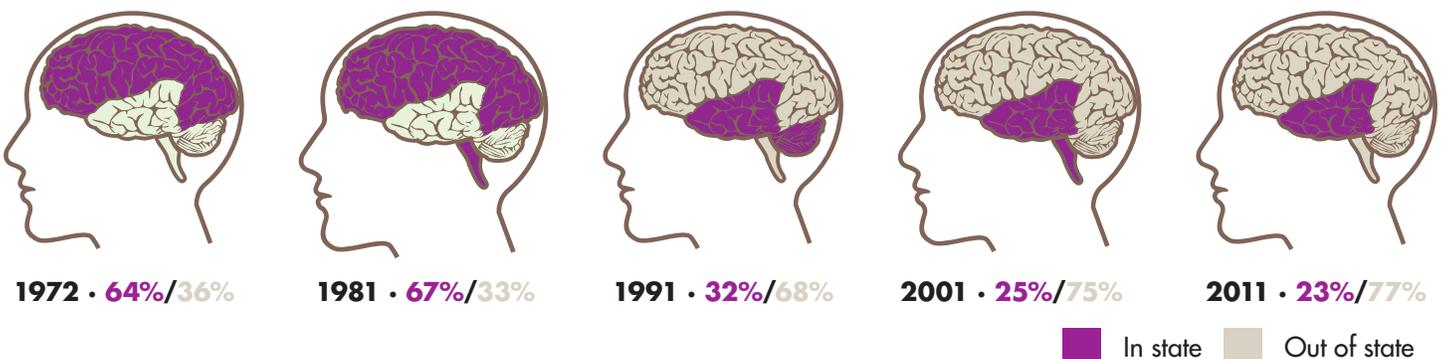
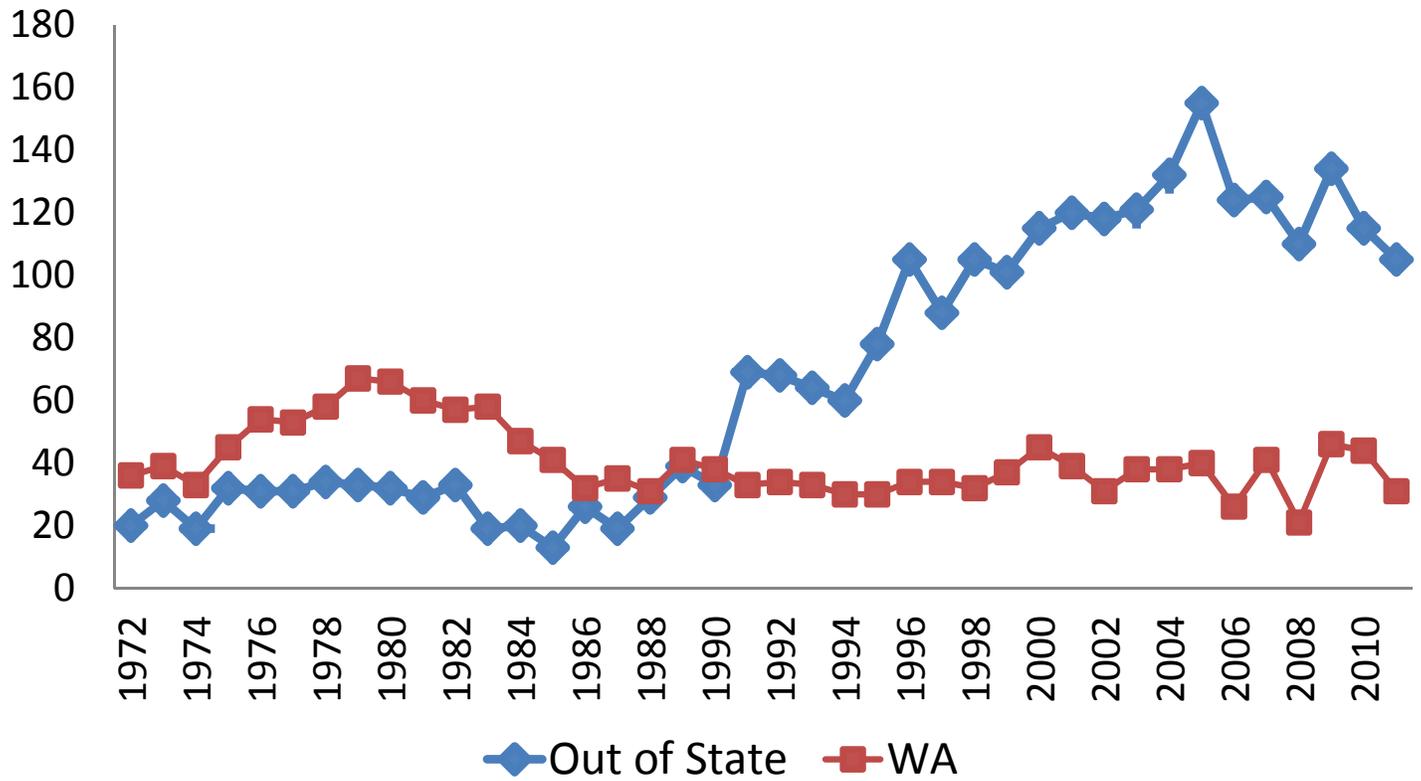
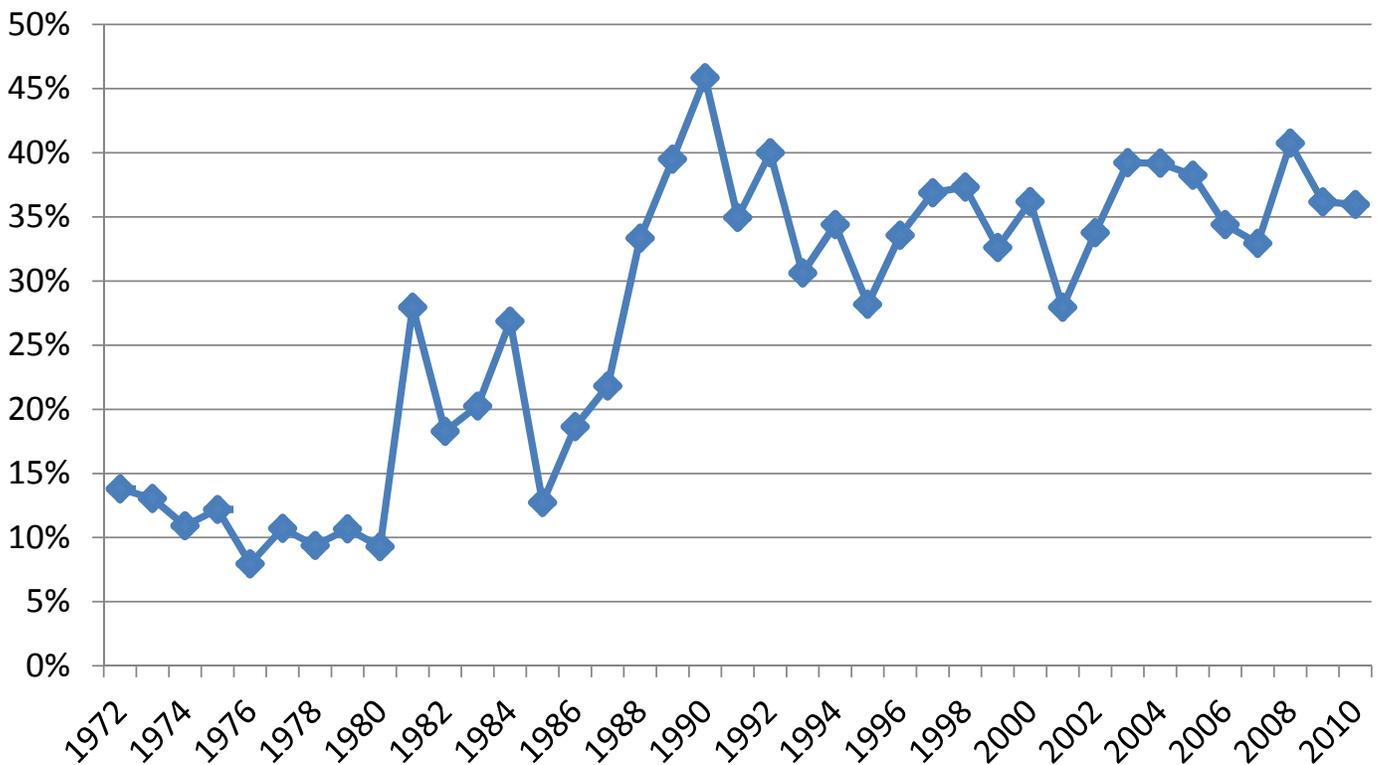


Figure 4: Number of Dentists in Washington Who Attended Dental School In-State and Out-of-State, By Initial License Year



Source: DOH and ADA data, as analyzed by WSDA

Figure 5: Percentage of New Dentists in Washington Who Enrolled in Postdoctoral Education, By Initial License Year



Source: DOH and ADA data, as analyzed by WSDA

# CHARACTERISTICS OF WASHINGTON DENTISTS

## EMPLOYMENT

Currently, 83% of practicing dentists in Washington work full-time (30 clinical hours or more per week).<sup>1</sup> As dentists get older, the number of clinical hours they work per week tends to decrease (Figure 6). A 2001 WSDA survey also found that 88% of dentists in Washington reported practicing full-time (Hart, 2001).

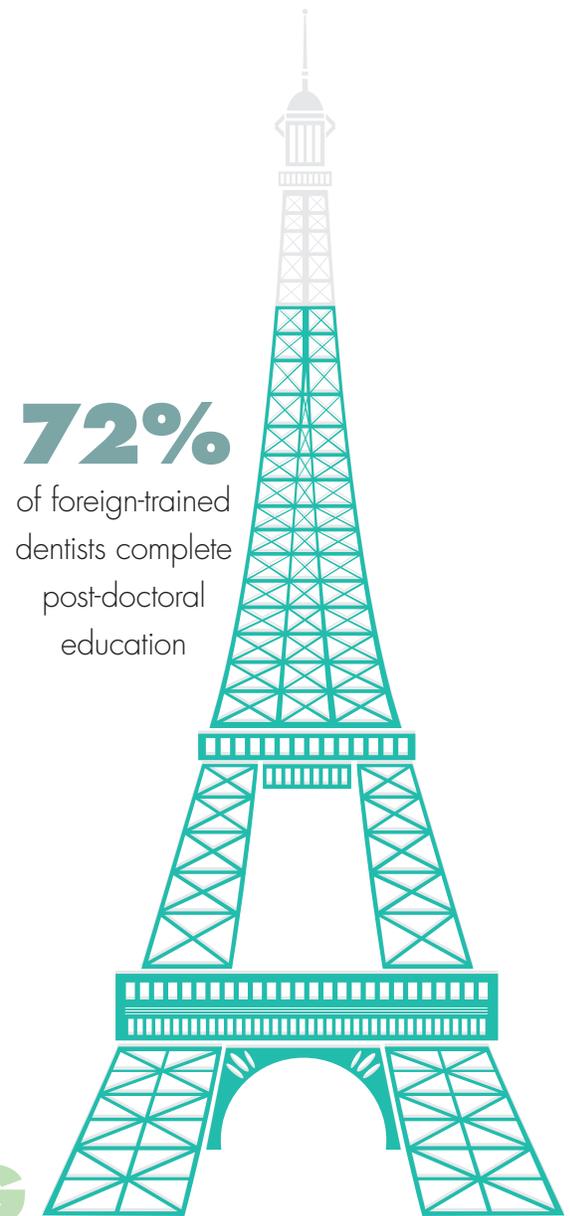
84% of dentists in Washington own their practice, the other 16% consider themselves an employee or independent contractor.



The vast majority of Washington dentists work full-time and own their practice. The number of clinical hours worked per week starts to decrease after age 50.

### WHAT DOES IT SHOW?

This infographic represents the percentage of dentists who complete post-doctoral education, comparing foreign-trained and US-trained dentists.



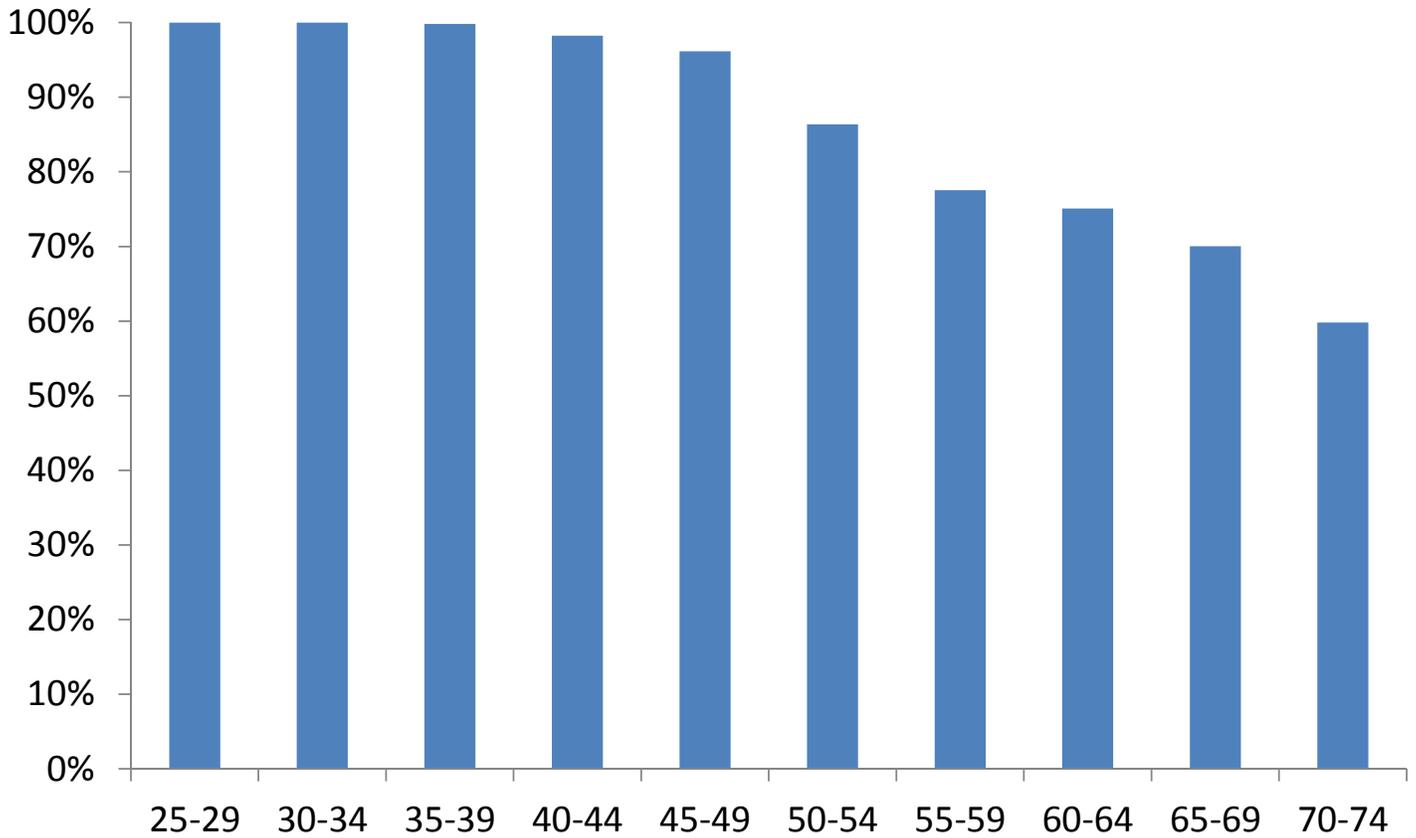
## FOREIGN TRAINING

The number of dentists in Washington who attended dental school in a foreign country has increased over time. In 2012, 5% of active dentists in this state went to dental school abroad. However, the proportion of newly-licensed dentists who were trained abroad has generally been higher in recent years, up to a high point of 11% in 2002 (Figure 7).

Foreign-trained dentists are considerably more likely to attend postdoctoral education. This is due to state law, which requires foreign-trained dentists to complete a minimum of one year of post-doctoral training from a dental school accredited by the Commission on Dental Accreditation (CODA) in the US or Canada. Some foreign-trained dentists complete one or two year residencies and others become specialists.

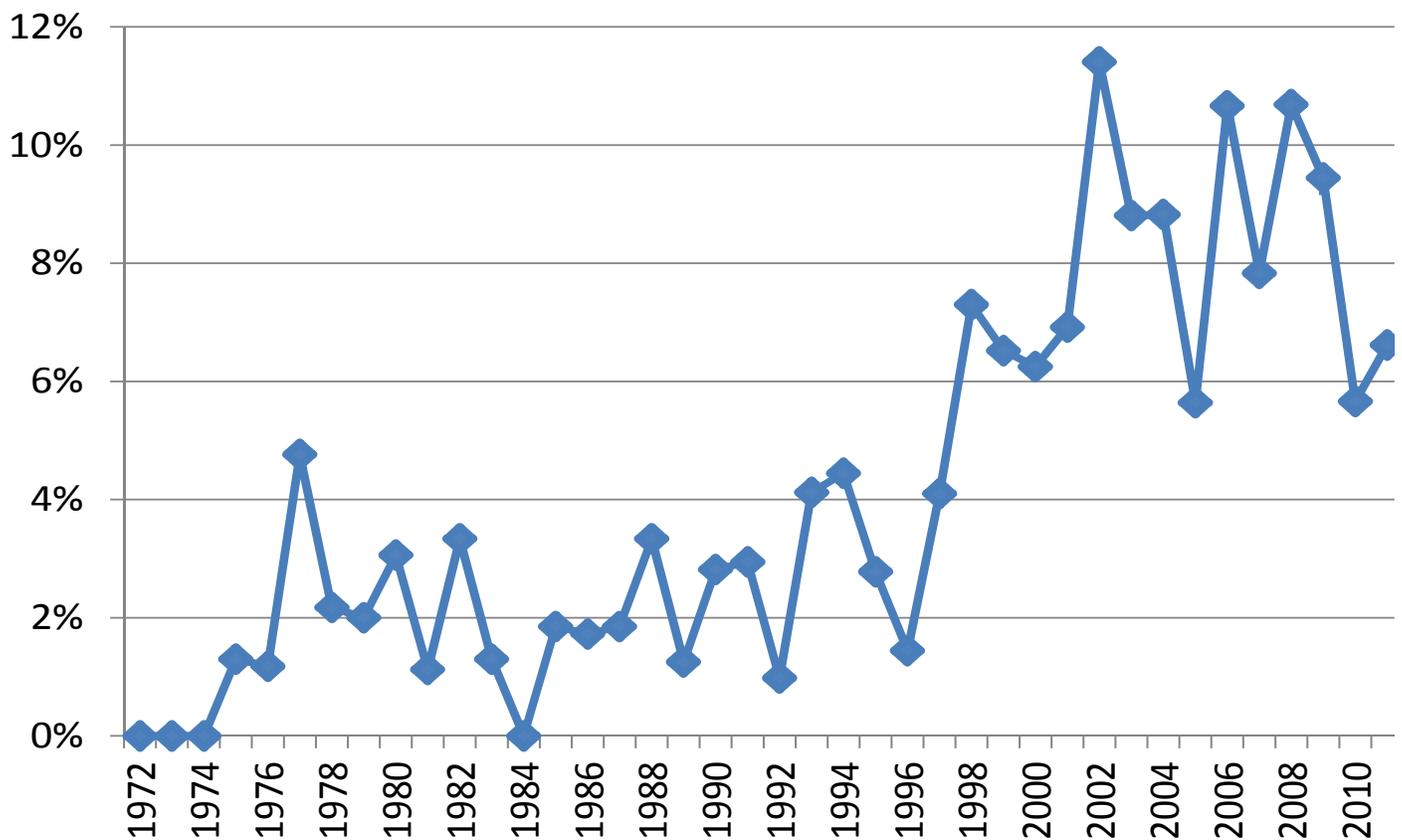
<sup>1</sup> Clinical work hours per week only include time spent performing clinical procedures on patients. This does not include hours spent on non-clinical work activities.

Figure 6: Percentage of Dentists Working Full-Time, By Age Group



Source: DOH and ADA data, as analyzed by WSDA

Figure 7: Foreign-Trained Newly-Licensed Dentists in Washington, By Initial License Year



Source: DOH and ADA data, as analyzed by WSDA

# FINDINGS



Washington has one of the ten best ratios of dentists to population in the nation.

## WORKFORCE PROJECTION

The following workforce projection is partly modeled on a projection in a 2009 WWAMI Center for Health Workforce Studies report (Skillman, et al., 2009, pp. 26-27). The workforce projection relies on the following elements:

### Number of Dentists Needed:

The number of active dentists needed in Washington is based on the ratio of dentists to people in the state. This projection takes the current ratio as a base and assumes that the ratio should be maintained into the future. The projection is unable to take into account future changes in efficiency, technology, population age and needs, and other factors that could influence how many dentists are required to serve a given population. It also does not take into account the distribution of dentists throughout the state.

State population projections were taken from the State of Washington Office of Financial Management (OFM) (2012). The current ratio of dentists per 100,000 people is 71. This ratio was applied to the OFM population projection for each year to obtain the number of dentists that will be required. This ratio is one of the highest in the nation, falling within the top 10 for all states. Washington's ratio has been gradually increasing since the 1990s; in 1993 the ratio was 64, and in 2003 it was 69. By comparison, the ratio for the nation as a whole has remained around 61 since 1993 (National Center for Health Statistics, 2011, p. 349).

### Number of New Dentists:

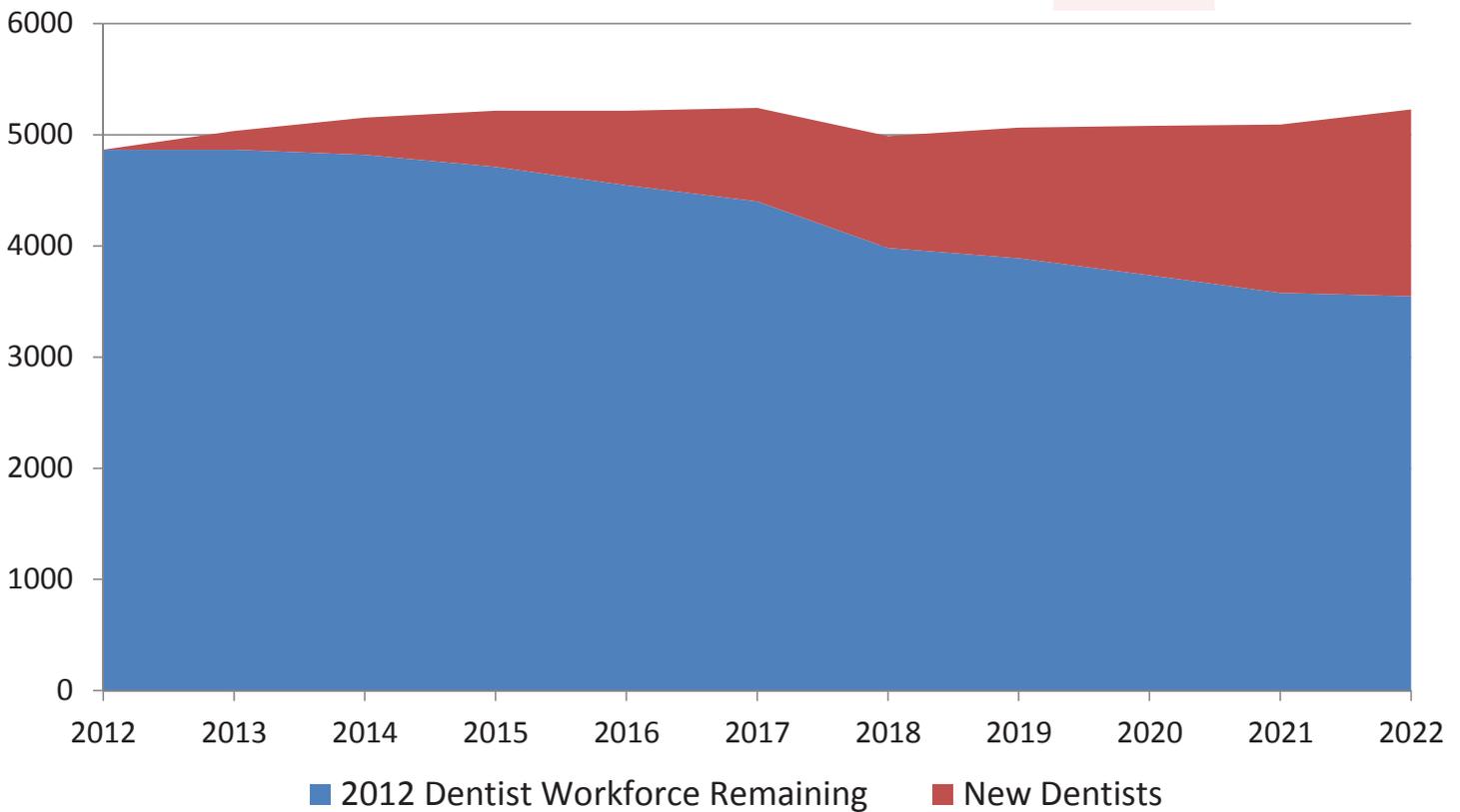
To estimate the number of new dentists who will enter the workforce, this projection assumed that recent trends will continue. From 2003-2012, an average of 168 active dentists per year obtained a Washington dental license for the first time. This average was then applied to each year in the future. According to ADA workforce projections for the nation, the number of dental graduates is expected to rise steadily for the next decade or two, as it has since the 1990s (American Dental Association, 2011a). If this projection is accurate, Washington may attract more than 168 new dentists per year in the future even if the number of UW School of Dentistry graduates remains stable, as such a large portion of Washington's dentists are trained out-of-state. The number of dental schools will also increase in the next 10 years, continuing a recent trend of growth in the number of dental programs (ibid, p. 2).

### Retirement of the Current Workforce:

In addition to the new dentists joining the workforce, the size of the workforce in the near future is dependent on when today's practicing dentists will retire. In a 2012 WSDA member survey, dentists were asked for their age as well as the number of years they planned to continue practicing before retiring. From these numbers, practicing dentists were placed in age groups and the percentage of dentists retired in each age group was calculated for the next twenty years. For example, if 68% of the dentists aged 55-59 in the survey said they planned to be working in 2019, it was assumed that 68% of all dentists in Washington now aged 55-59 will be working in 2019. The numbers for each age group were then added to come up with the total number of today's dentists that will still be in the workforce each year.

Dentists in the survey who were older and closer to their retirement tended to estimate older retirement ages. For instance, the 25-29 year old age group expected to retire at 62 on average, whereas the 60-64 year old age group expected to retire at 69 on average. If younger dentists have underestimated the years they will be working, there is a possibility that the number of dentists in the future workforce will be higher than projected.

Figure 8: Projected Number of Dentists in Washington, 2012-2022



Source: DOH and ADA data, as analyzed by WSDA

### Total Number of Dentists Available:

The number of dentists in the workforce in each future year is simply the combination of the number of new dentists and the number of the current workforce that has not yet retired (Figure 8).

### Comparison to WWAMI Workforce Projection:

The method used in this projection to estimate the number of dentists needed is the same as the method used in the WWAMI Center for Health Workforce Studies report, but with updated population numbers. However, the methods used to estimate the other elements of the projection are different. In the WWAMI report, only the number of UW graduates expected to work in Washington was included, ignoring the out-of-state graduates who make up a large majority of new dentists. The methods used to estimate how long today's dentists will be in the workforce also differed. The WWAMI projection relied on survey results from dentists as well (from a 2007 survey), but used the percentage of dentists in each age group who say they are now working to reflect and project what percentage of dentists in each group in the future will be working. That is, if 90% of survey respondents aged 55-59 said they are working now, it was assumed that 90% of dentists who will be 55-59 in 2019 will be working then.



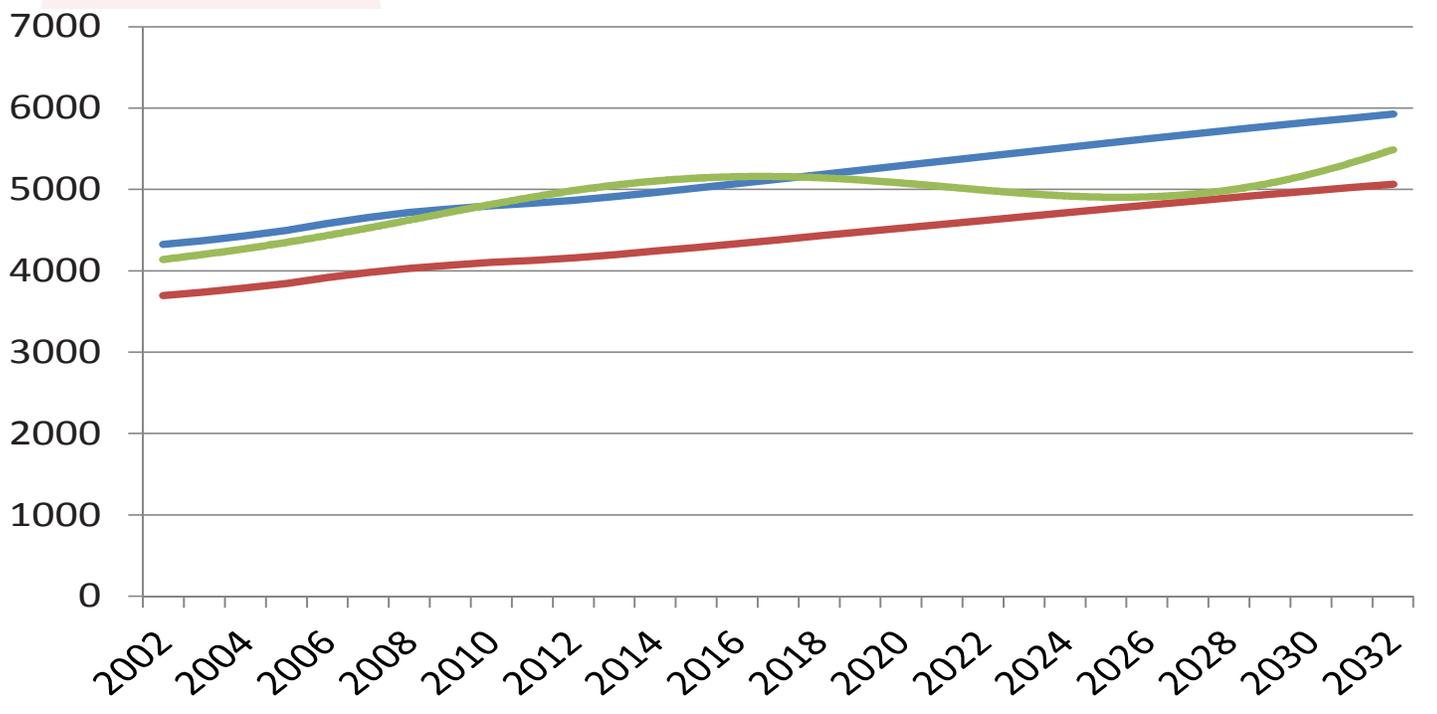
# FINDINGS

## PROJECTION RESULTS

The number of dentists relative to Washington's population will continue to increase over the next few years and then fall slightly below today's ratio (Figure 9). This projection estimates there will be 69 dentists for every 100,000 Washingtonians in 2022 and 66 dentists per 100,000 Washingtonians in 2032. The projected ratios for the next two decades are consistent with Washington's ratios in the late 1990s and early 2000s; all of these ratios are above the consistent national average of 61 dentists per 100,000 people. The primary reason for the slight decrease in Washington's dentist-to-population ratio is the large cohort of dentists trained in the 1970s who are nearing retirement age.

In short, Washington's dental workforce is projected to continue to grow but at a slightly slower pace than recent years. Washington's overall ratio of dentists-to-population is expected to remain above the consistent national average.

Figure 9: Actual and Projected Number of Dentists in Washington Compared to Dentist: Population Ratio, 2002-2032



- Dentists Needed to Maintain Current Washington Dentist:Population Ratio
- Dentists Needed to Maintain Current National Dentist:Population Ratio
- Total Dentists Available

Source: DOH and ADA data, as analyzed by WSDA

# DISTRIBUTION OF DENTISTS

## Rural vs. Urban Practice:

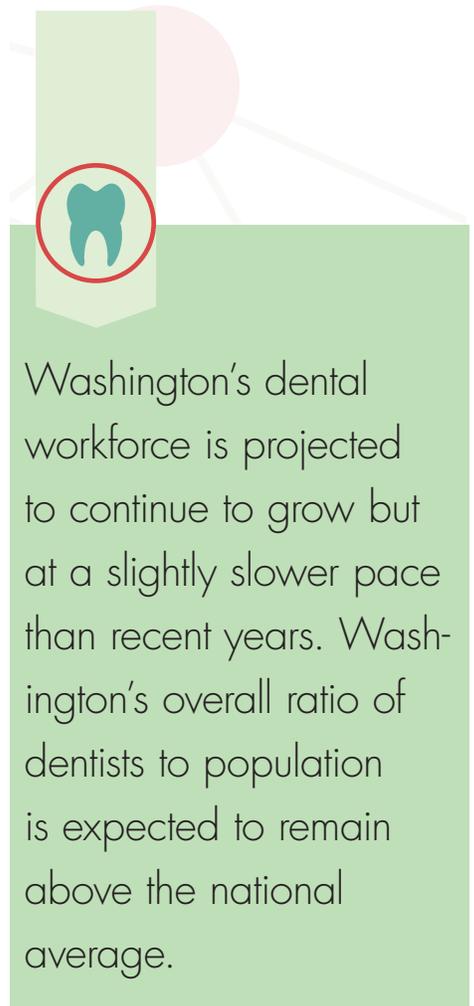
The vast majority of dentists in Washington (92%) practice in an urban area. The percentage of dentists who practice in an urban area gradually, but consistently, decreases with the increasing age of the dentist: 96% of 25-29 year olds are in an urban area, compared to 88% of 70-74 year olds. A somewhat larger portion of female dentists practice in an urban area: 96% compared to 90% for males. Foreign-trained dentists are also slightly more likely to practice in an urban setting, at 96%. White dentists are less likely to be urban (90%, compared to 98% for Asian dentists).

“Urban” and “rural” were determined using the zip code of the DOH address on file and that zip code’s placement in the Rural-Urban Commuting Area (RUCA) codes, a widely-used methodology for classifying geographic areas. Data compiled from the 2010 Census indicates that approximately 84% of Washingtonians live in an urban area.<sup>2</sup> To qualify as an urban area, the US Census Bureau requires a city or township to have at least 2,500 people, at least 1,500 of whom reside outside of institutional group quarters.

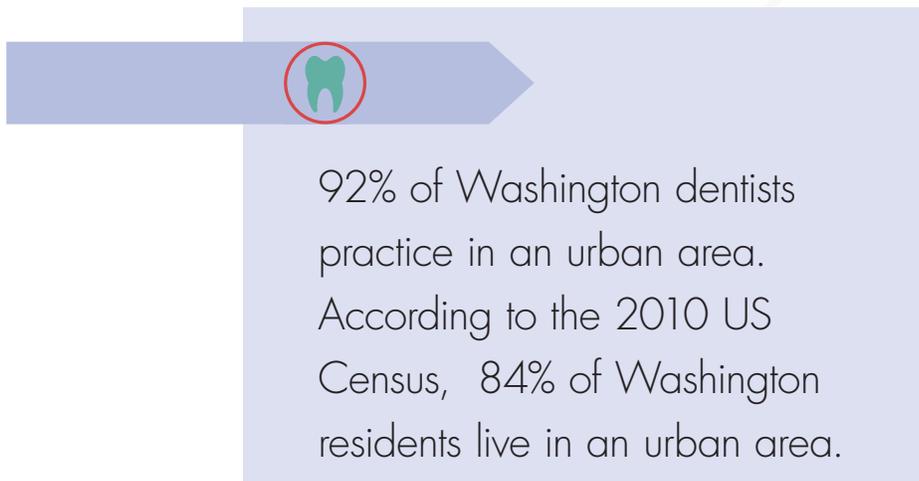
## Distribution by County:

Although Washington state has a high dentist-to-population ratio, these dentists are not evenly distributed throughout the state. The dentist-to-population ratio varies widely by county. King County has the highest ratio, at 108 dentists per 100,000 people. The ratio falls as low as 13 dentists per 100,000 people in Ferry County. There are 20 counties with a ratio lower than 50 dentists per 100,000 people. 11% of Washington’s residents live in these 20 counties.

Not all rural counties have low dentist to population ratios. The following rural counties have ratios higher than 50: Adams, Asotin, Clallam, Jefferson, Okanogan, San Juan, and Walla Walla. It is not clear from the data why these rural counties have higher ratios than Washington’s other rural counties. It should also be noted that several counties (Ferry, Lincoln, Pend Orielle, Garfield, Columbia, Skamania, Pacific, and Wahkiakum) have less than 5 licensed dentists in their entire county. These 8 counties are the state’s least populous counties and have an average population of 9,179 residents. Figure 10 lists both the number of dentists and the dentist-to-population ratio for each county.



Washington’s dental workforce is projected to continue to grow but at a slightly slower pace than recent years. Washington’s overall ratio of dentists to population is expected to remain above the national average.

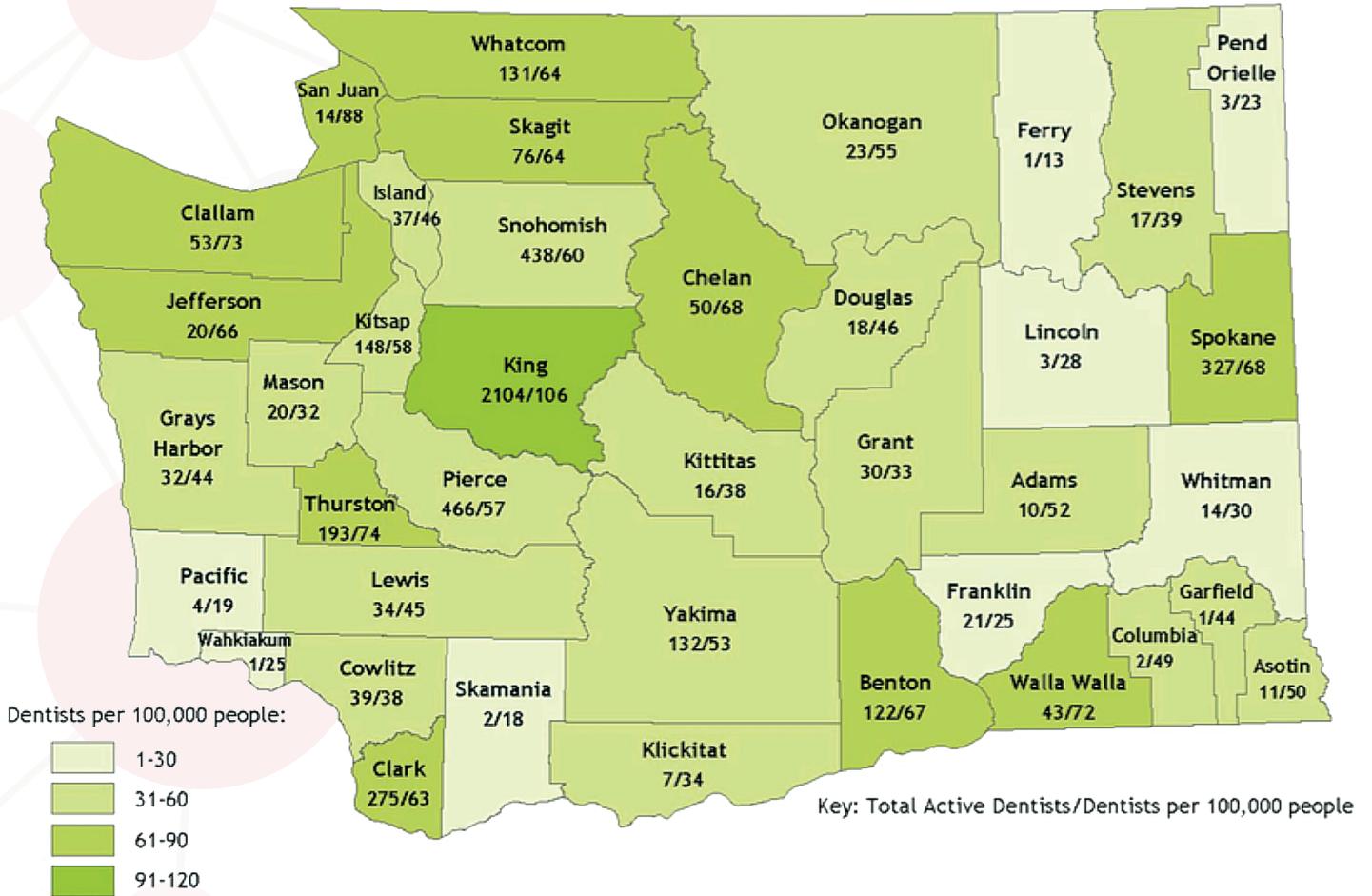


92% of Washington dentists practice in an urban area. According to the 2010 US Census, 84% of Washington residents live in an urban area.

<sup>2</sup> This data was collected on July 8, 2013 at <http://www.census.gov/georef/ua/urban-rural-2010.html>.

# FINDINGS

Figure 10: Number of Dentists and Dentist: Population Ratio By County



Sources: DOH and ADA data, State of Washington Office of Financial Management (2011), as analyzed by WSDA

## CONCLUSION

Washington's dentists have become increasingly diverse during the past several decades. This is true not only in terms of race and gender, but also with regard to how most Washington dentists obtained their dental and/or postdoctoral training elsewhere in the United States or in foreign countries. Washington's dental workforce, however, is unevenly distributed across the state. Counties with larger urban populations tend to have higher dentists to population ratios than counties with smaller urban populations.

Washington's ratio of dentists to population has increased from 64 dentists for every 100,000 Washingtonians in 1993 to 71 dentists for every 100,000 Washingtonians in 2012. Over the next twenty years, the state's ratio of dentists to population is expected to decrease slightly but remain above average for the nation as a whole. This projection estimates there will be 69 dentists for every 100,000 Washingtonians in 2022 and 66 dentists per 100,000 Washingtonians in 2032.

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## About the Authors

Dan Jones is a recent graduate of the University of Washington, receiving a Master of Public Administration from the Evans School of Public Affairs and a Master of Arts in International Studies from the Jackson School of International Studies. He is currently pursuing work as an analyst, researcher, or program officer for a public policy organization, particularly in the fields of global development, public health, and education. Jones worked as a policy research intern at the Washington State Dental Association during the summer of 2012, and again briefly during the summer of 2013.

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